SCOPE & DEFINITIONS

This chapter contains criteria to control and abate threats to human health and the environment from the handling, use, storage, and disposal of polychlorinated biphenyls (PCBs). These criteria include specific requirements for most uses of PCBs, including (but not limited to) transformers, capacitors, heat transfer systems, hydraulic systems, electromagnets, switches and voltage regulators, circuit breakers, reclosers, and cables.

Capacitor – A device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric.

Chemical Waste Landfill – A landfill at which a high level of protection against risk of injury to human health or the environment from migration of deposited PCBs to land, water, or the atmosphere is provided by incorporating special methods for locating, engineering, and operating the landfill.

In or Near Commercial Buildings – Within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 30 meters of a non-industrial, non-substation building.

Incinerator – An engineered device using controlled flame combustion to thermally degrade PCBs and PCB items. Examples include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.

Leak or leaking – Any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface.

Mark – The descriptive name, instructions, cautions, or other information applied to PCBs and PCB items, or other objects subject to this FGS.

Marked – PCB items and PCB storage areas and transport vehicles marked by applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets these criteria.

Non-PCB Transformers – Any transformer that contains less than 50 ppm PCB.

PCB – Any mixture that contains one or more of the following substances in a total content greater than 0.005 percent by weight (50 ppm):

- Polychlorinated biphenyls
- Polychlorinated triphenyls
- Monomethyltetrachlorodiphenylmethane
- Monomethyldichlorodiphenylmethane
- Monomethyldibromodiphenylmethane

PCB Article – Any manufactured article, other than a PCB container, that contains PCBs and whose surface(s) has been in direct contact with PCB. This includes capacitors, transformers, electric motors, pumps, and pipes.

PCB Article Container – Any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB articles or PCB equipment, and whose surface(s) has not been in direct contact with PCBs.

PCB Container – Any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB articles, and whose surface(s) has been in direct contact with PCBs.

PCB-Contaminated Electrical Equipment – Any electrical equipment including (but not limited to) transformers, capacitors, circuit breakers, reclosers, voltage regulators, switches, electromagnets, and cable that contain 50 ppm or greater PCB, but less than 500 ppm PCB.

PCB Equipment – Any manufactured item, other than a PCB container or a PCB article container, which contains a PCB article or other PCB equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.

PCB Item – Any PCB article, PCB article container, PCB container, or PCB equipment that deliberately or unintentionally contains or has as a part of it any PCB, or PCBs at a concentration of 50 ppm or greater and that has not been decontaminated. Any item that due to the fabrication process, use, or maintenance operations is suspected to contain PCBs at 50 ppm or greater is considered as if containing PCB, unless there are records (i.e., manufacturer's warranty or analytical data) to the contrary.

PCB Large High Voltage Capacitor – A capacitor that contains 1.36 kg (3 lbs) or more of dielectric fluid and which operates at 2,000 volts (alternating current (a.c.) or direct current (d.c.)) or above.

PCB Large Low Voltage Capacitor – A capacitor that contains 1.36 kg (3 lbs) or more of dielectric fluid and which operates below 2,000 volts (a.c. or d.c.).

PCB Transformer – Any transformer that contains 500 ppm PCB or greater.

Restricted Access Area – Areas where access by unauthorized personnel is controlled by fences, other man-made structures, or naturally-occurring barriers such as mountains, cliffs, or rough terrain.

Substantial Contact Area – An area that is subject to public access on a routine basis or which could result in substantial dermal contact by employees.

CRITERIA

C14.1 GENERAL

C14.1.1 The installation spill contingency plan will address PCB items, including temporary storage items. Chapter 18 (Spill Prevention and Response Planning) provides criteria on how to prepare these plans.

C14.1.2 Notification of PCB spills will follow the procedures in C18.4. Spills of PCB liquids of unknown concentrations, or concentrations of 50 ppm or greater will be responded to immediately upon discovery and cleaned up in accordance with the following, unless more protective standards are established by the Spanish authorities in a site-specific soil and/or groundwater remediation agreement:

C14.1.2.1 Surfaces that are located in substantial contact areas will be cleaned to 10 micrograms per 100 square centimeters (µg /100 cm^2).

C14.1.2.2 Surfaces in all other contact areas will be cleaned to 100 µg/100 cm^2.

C14.1.2.3 Contaminated soil located in restricted access areas will be removed until the soil tests no higher than 25 ppm PCBs and will be backfilled with clean soil containing less than 1 ppm PCBs. Restricted access areas in which PCB spills have been cleaned up shall have annotated on installation real property records the level of PCBs remaining in the soil, including the extent, date, and type of sampling and a reference to any reports documenting the site conditions.

C14.1.2.4 Contaminated soil located in unrestricted access areas will be removed to a minimum depth of 10 inches or until the soil tests no higher than 10 ppm PCBs, whichever is deeper, and will be backfilled with clean soil containing less than 1 ppm PCBs.

C14.1.2.5 Contaminated soil, PCB waste, and decontamination waste removed from the spill site will be disposed of in accordance with Chapter 6.

C14.1.3 All PCB transformers, PCB large high voltage capacitors, PCB containers, and PCB items containing PCB concentrations of 50 ppm or greater or 1 liter or greater of PCBs by volume (i.e., electric motors using PCB coolants, hydraulic systems using PCB hydraulic fluid, and heat transfer systems using PCBs), as well as any PCB article containers used to store the preceding items, must be prominently marked in English and Spanish. The marking must identify the item as containing PCBs, warn against improper disposal and handling, and provide a phone number in case of spills or if questions arise about disposal. This marking criteria also applies to rooms (a warning label must be applied to doors), vaults, and storage areas containing PCB transformers or storing PCBs or PCB items for disposal. In addition, the following PCB items must be marked at the time of the items' removal from use if not already marked: PCB

large low voltage capacitors and equipment containing a PCB transformer or PCB large high voltage capacitor.

Decontaminated/former PCB-containing devices must be labeled as such. The label must contain the following information:

- Fluids containing PCB have been replaced with: _____
- On date: _____
- By (name of the authorized decontamination company): _____
- PCB concentration (% by weight) of the replaced fluid: _____
- New fluid PCB concentration (% by weight): _____

PCB containers must be leak-proof, double-walled, and properly labeled. The structures for collection and storage of PCB equipment, containers, or material must be equipped with an impervious floor, a containment system, and a specific drainage system (to avoid discharge of any contaminated fluid into the wastewater sewer system). The capacity of the containment system must be (at a minimum) equal to half of the total quantity of PCBs or at least equal to the higher individual volume of PCBs.

No PCBs or PCB items will be stored or handled close to explosive, flammable, oxidant, or corrosive substances.

C14.1.4 Each installation having PCB items will maintain a written inventory that includes a current list by type of all PCB items in use and all PCB items placed into storage for disposal or disposed of for that year. Inventory records should be maintained for a period of time at least 3 years after the last item on the list is disposed of.

Installations that have PCB items with greater than 1 liter of PCBs by volume must submit the following information to the Spanish Base Commander, who may transmit the information to the competent regional Spanish authority (see Chapter 1 for the procedure):

- Name and address of DoD installation
- Item: number, type, serial model, and voltage capacity
- Quantity of PCB (in kg)
- Concentration of PCB and available analytical results
- Dates and type of conducted (or foreseen) treatment or substitution procedures
- Certification that visual inspections were performed to check for appropriate operating conditions and potential leakage
- Date of the declaration

This information must be submitted by 1 September 2000 and every 3 years thereafter. In addition, the following information must be submitted within 1 month of any decontamination, disposal, or maintenance operation:

- Information/data about equipment that was decontaminated or disposed of
- Any maintenance or handling procedure that may affect the fluid, with the corresponding analysis of the resulting PCB concentration

C14.1.5 Disposal of PCB items will only be through the servicing DRMO in accordance with DoD 4160.21-M, or criterion C14.5.

C14.1.6 All periodic inspections as required in this Chapter will be documented at the installation. Records of inspections and maintenance history will be maintained for 3 years after disposal of the transformer.

C14.2 PCB TRANSFORMERS (500 PPM PCB OR GREATER)

C14.2.1 PCB transformers that are in use or in storage for reuse will not be used in any application that poses a risk of contamination to food or feed.

C14.2.2 All PCB transformers, including those in storage for reuse, will be registered with the servicing fire department/emergency service provider. These transformers will also be included in the "declaration" of PCBs (see C14.1.4).

C14.2.3 PCB transformers in use in or near commercial buildings or located in sidewalk vaults will be equipped with electrical protection to minimize transformer failure that would result in the release of PCBs.

C14.2.4 PCB transformers removed and stored for reuse will only be returned to their original application and location and will not be used at another location unless there is no practical alternative; and any such alternative use will not exceed 1 year.

C14.2.5 PCB transformers will be managed as follows:

C14.2.5.1 Servicing of PCB transformers with PCB fluids is prohibited. PCB transformers still in use must be decontaminated or disposed of by 1 January 2011.

C14.2.5.2 Any servicing of PCB transformers requiring removal of the transformer coil is prohibited.

C14.2.5.3 PCBs removed during servicing cannot be reused. They will be captured and disposed of in accordance with C14.1.5.

C14.2.5.4 The use of PCBs in dielectric fluids is prohibited.

C14.2.6 All in-service PCB transformers (greater than 500 ppm) will be inspected at least every 3 months except that PCB transformers with impervious, undrained secondary containment capacity of 100 percent of dielectric fluid or PCB transformers tested and found to contain less than 60,000 ppm PCBs will be inspected at least every 12 months.

C14.2.7 If any PCB transformer is involved in a fire such that it was subjected to heat and/or pressure sufficient to result in violent or nonviolent rupture, the installation will take measures to control water runoff, such as blocking floor drains. Runoff water will be characterized and disposed in accordance with the installation's spill plan.

C14.2.8 Replace leaking PCB transformers within 48 hours or as soon as possible. Leaking PCB transformers will be inspected daily until replaced. Leaking PCB fluid will be containerized.

C14.2.9 All transformers will be considered and treated as PCB transformers unless information to the contrary exists.

C14.3 OTHER PCB ITEMS

C14.3.1 All operative equipment containing PCBs (including, but not limited to, electromagnets, switches, and voltage regulators) must be decontaminated or disposed of by 1 January 2011. Decontamination activities must be conducted by authorized companies. The decontaminated equipment must be serviced with dielectric fluid that does not contain PCBs and the equipment must be appropriately labeled (following C14.1.3).

C14.3.2 Capacitors containing PCBs at any concentration must be managed as follows:

C14.3.2.1 Use and storage for reuse of PCB large high-voltage capacitors and PCB large low-voltage capacitors that pose an exposure risk to food or feed is prohibited.

C14.3.2.2 Use of PCB large high-voltage and PCB large low-voltage capacitors is prohibited unless the capacitor is used within a restricted-access electrical substation or in a contained and restricted-access indoor installation. The indoor installation will not have public access and will have an adequate roof, walls, and floor to contain any release of PCBs.

C14.3.3 Any PCB item removed from service will be marked with the date it is removed from service. The competent authority must be notified (via the Spanish Base Commander) within 1 month from the removal date (see C14.1.4). This notification should include information on the method of disposal.

C14.4 STORAGE PRIOR TO DISPOSAL

C14.4.1 In addition to the labeling requirements in C14.1.3, PCBs and PCB items at concentrations of 50 ppm or greater that are to be stored before disposal must be labeled in accordance with Chapter 6. The doors to rooms/facilities where the items are stored must also be labeled. The items must be stored in a facility that will assure the containment of PCBs, including:

C14.4.1.1 Roofs and walls of storage buildings that exclude rainfall

C14.4.1.2 A containment berm, at least 6 inches high, sufficient to contain twice the internal volume of the largest PCB article or at least 50 percent of the total internal volume of all PCB articles or containers stored, whichever is greater

C14.4.1.3 Drains, valves, floor drains, expansion joints, sewer lines, or other openings constructed to prevent any release from the bermed area

C14.4.1.4 Continuous, smooth, and impervious flooring material

C14.4.1.5 To the maximum extent possible, a new PCB storage area will be located to minimize the risk of release due to seismic activity, floods, or other natural events. For facilities located where they may face such risks, the installation spill prevention and control plan will address the risk.

C14.4.2 The temporary storage of PCB items in facilities that do not comply with the above requirements is not allowed.

C14.4.3 All other PCB storage areas will be inspected at least monthly.

C14.4.4 Containers used for the storage of PCBs will be at least as secure as those required for their transport for disposal by the servicing DRMO and, at a minimum, must be impervious, double-walled, and labeled according to C14.1.3.

C14.5 DISPOSAL

C14.5.1 Installations that generate PCB waste of 50 ppm or greater PCB will maintain an audit trail for the wastes at least as stringent as that required under the criteria in Chapter 6. Installations shall dispose of PCB items either:

- Through the servicing DRMO in accordance with DoD 4160.21-M, or
- In country in accordance with the following paragraphs and Chapter 6 after obtaining concurrence from the EEA via the Component chain of command.

C14.5.2 For in-country disposal, the following PCB items must be delivered to an authorized company for disposal via incineration (which must meet a minimum 99.9% combustion efficiency):

- PCB-contaminated dielectric fluid
- Rags, soils, and other PCB-contaminated debris
- PCB articles other than those described above or described in C14.5.3

C14.5.3 For in-country disposal, the following PCB items must be delivered to an authorized company for decontamination or disposal via incineration (which must meet a 99.9% combustion efficiency):

- PCB transformers
- PCB capacitors
- Hydraulic machines containing PCBs
- PCB-contaminated electrical equipment (except capacitors)
- PCB containers

C14.5.4 Where PCB fluids, items, or articles are disposed of in an incinerator in Spain, the incinerator must be authorized by the competent Spanish authority. For disposal of PCBs or PCB-containing equipment other than via incineration, the disposal company must have explicit authorization from the competent Spanish authority for such disposal method.

The following procedures will be followed, unless other more restrictive requirements are imposed by the competent Spanish authority in the incineration authorization:

C14.5.4.1 The incineration of PCB wastes will be performed in compliance with the emission limits (including dioxins and furans) and operating conditions (minimum temperature of 1,100 °C) according to the requirements of Chapter 6 (Tables 6.1 to 6.4)

C14.5.4.2 Combustion efficiency, measured by the ratio of the concentration of carbon dioxide to the total concentration of both carbon dioxide and carbon monoxide, will be maintained at least 99.9 percent

C14.5.4.3 The rate and quantity of PCBs which are fed to the combustion system shall be measured and recorded at regular intervals not greater than 15 minutes

C14.5.4.4 The temperatures of the incineration process shall be continuously measured and recorded

C14.5.4.5 The flow of PCBs to the incinerator shall stop automatically if temperature criteria are not met

C14.5.4.6 Monitoring is conducted sufficient to determine that an incinerator to be used for disposal the first time will operate within the criteria above

C14.5.4.7 Continuous monitoring is conducted during incineration of PCBs for oxygen and carbon monoxide and periodic monitoring for carbon dioxide

C14.5.5 Retrogrades of PCB Items. DoD-generated PCB items manufactured in the U.S. will be returned to CONUS via DRMS for delivery to a permitted disposal facility if Spanish or third country disposal is not possible, is prohibited, or will not be managed in an environmentally sound manner. Ensure that all PCB items and equipment are marked in accordance with the criteria in C14.1.3.

C14.6 ELIMINATION OF PCB PRODUCTS

C14.6.1 Installations shall minimize the use of PCBs and PCB items without degrading mission performance. Any device containing more than 5 liters of PCB must be decontaminated or disposed of by 1 January 2011, except for transformers with PCB concentrations between 50 and 500 ppm, which may be used until the end of their life cycle.

C14.6.2 Installations shall not purchase or otherwise take control of PCBs or PCB items for use.

C14.6.3 All procurement of transformers or any other equipment containing dielectric or hydraulic fluid shall be accompanied by a manufacturer's certification that the equipment contains no detectable PCBs (less than 2 ppm) at the time of shipment.

C14.6.4 Such newly procured transformers and equipment shall have permanent labels affixed stating they are PCB-free (no detectable PCBs).

ADMINISTRATIVE ITEMS

1. Installations that have PCB items with greater than 1 liter of PCBs by volume must submit the following information to the Spanish Base Commander, who may transmit the information to the competent regional Spanish authority (see Chapter 1 for the process):

- Name and address of holder
- Item: number, type, serial model, and KVA
- Quantity of PCB (in kg)
- Concentration of PCB and available analytical results
- Dates and type of conducted (or foreseen) treatment or substitution procedures
- Certification that visual inspections were performed to check for appropriate operating conditions and potential leakage

- Date of the declaration

This information must be submitted by 1 September 2000 and every 3 years thereafter. In addition, the following information must be submitted to the authorities within 1 month of any decontamination, disposal, or maintenance operation:

- Information/data about equipment that was decontaminated or disposed of
- Any maintenance or handling procedure that may affect the fluid, with the corresponding analysis of the resulting PCBs concentration

2. Notification and coordination with the Spanish Base Commander in the event of any PCB spill that affects soil and/or groundwater resources. The Spanish Base Commander may provide the information to the competent Spanish authorities.